Inside Sea Grant

VOLUME 6, NUMBER 1 SUMMER 2002

Consortium receives National Sea Grant award for 2002-2003

The National Sea Grant College Program has awarded $1.6 million to the S.C. Sea Grant Consortium to support its research, extension, communications, and education efforts for 2002-03. Fourteen research and education projects have received funding to examine a number of marine and coastal-resource needs.

Coastal Ocean Studies

• In a continuing study, Paul Work of Clemson University and George Voulgaris of the University of South Carolina (USC) examine potential beach-nourishment "borrow" sites. The investigators will identify and characterize beach-nourishment materials in nearshore areas, which could be dredged and pumped onto beaches.

• Voulgaris will also work on a study to examine the relationship between an offshore sand shoal in the Myrtle Beach area and coastal erosion dynamics. He will characterize and quantify the potential for the shoal to be a sustainable "borrow" site for beach nourishment.

Ecosystem Dynamics

• Amy Ringwood of the S.C. Dept. of Natural Resources (DNR) will continue studies on methods of testing and validating promising cellular biomarkers. This study has the potential to yield tools that will identify individuals and populations of two common estuarine bivalve species, the oyster *Crassostrea virginica* and marsh mussel *Geukensia demissa*, which are experiencing chronic stress.

• In an ongoing study, James T. Morris of USC and colleagues will refine a model of plant succession of tidal freshwater wetlands on the Cooper River, South Carolina. The researchers will continue examining former rice fields, which are changing rapidly due to human intervention. Information from this project will be provided to state and federal

continued on page 2

Consortium hires new staff

Jennifer Jolly Clair joins the S.C. Sea Grant Consortium on a part-time basis as a marine educator. Clair will coordinate the agency's marine-science education activities, including collaborating with other organizations to develop marine and aquatic education curricula aligned to the South Carolina Science Curriculum Standards.

Jennifer Jolly Clair

Carolyn Robinson joins the S.C. Sea Grant Consortium as an administrative assistant. Robinson will perform a variety of administrative duties, including payroll, purchasing and conference planning. She is currently enrolled at Voorhees College, and expects to graduate in May 2003 with a B.A. in Organizational Management.

Carolyn Robinson

Inside Sea Grant is published two times a year to inform interested constituents about opportunities, activities, goals and accomplishments of the S.C. Sea Grant Consortium.

S.C. Sea Grant Consortium is a university-based network supporting research, education, and outreach to conserve coastal resources and enhance economic opportunity for the people of South Carolina.

Editors
Linda Blackwell
John H. Tibbetts

Art Director
Patty Snow

Contributing Writers
Rick DeVoe
Susan Ferris

Direct correspondence to:
Inside Sea Grant **Editor**
S.C. Sea Grant Consortium
287 Meeting Street
Charleston, SC 29401
phone (843) 727-2078
fax (843) 727-2080
www.scseagrant.org

Sea Grant
S.C. Sea Grant Consortium

S.C. Sea Grant Staff

287 Meeting St.
Charleston, SC 29401
phone (843) 727-2078
fax (843) 727-2080
www.scseagrant.org

Rick DeVoe
Executive Director
Rick.Devoe@scseagrant.org

Elaine Knight
Assistant Director
Elaine.Knight@scseagrant.org

John Dwyer
Assistant to the Director
for Program Management
John.Dwyer@scseagrant.org

Jennifer Jolly Clair
Marine Educator
COASTeam@cofc.edu

COMMUNICATIONS

Linda Blackwell
Communications Director
Linda.Blackwell@scseagrant.org

Susan Ferris
Public Information
Specialist
Susan.Ferris@scseagrant.org

Patty Snow
Art Director
Patty.Snow@scseagrant.org

John H. Tibbetts
Writer
John.Tibbetts@scseagrant.org

ADMINISTRATIVE STAFF

Annette Dunmeyer
Administrative Specialist II
Annette.Dunmeyer@scseagrant.org

Carolyn Robinson
Administrative Specialist II
Carolyn.Robinson@scseagrant.org

Romeka Washington
Accountant/Fiscal Analyst III
Romeka.Washington@scseagrant.org

Inside Sea Grant

continued from page 1

natural resource agencies as they address management of impoundments.

• Joseph Staton of USC and colleagues will use the copepod *Amphiascus tenuiremis* as an estuarine model, aiming to understand the potential risk of a new pesticide, and develop a monitoring tool for fipronil, a newly approved and highly toxic pesticide. Fipronil is being used in areas adjacent to estuarine systems in South Carolina, such as golf courses.

• Timothy Shaw and Thomas Chandler of USC will develop exposure-toxicity risk assessment tools based on the bioaccumulation of heavy metals in the benthic foraminiferan *Ammonia becarii*, and toxic response of the common benthic copepod *Amphiascus tenuiremis*. Ultimately, coastal managers could use information gathered during this study to better determine new approaches to toxic site cleanup.

• Willard Moore of USC will address the effects on coastal water quality and ecosystem health resulting from coastal land-use change. This research project, a joint effort with Georgia Sea Grant, will determine the nutrient flux of groundwater and impacts on various biological processes in tidal creek waters in the Satilla River (Ga.) system. The proposed work will provide answers to basic questions about coastal ecosystem health, and complements the Consortium's Land Use-Coastal Ecosystem Study (LU-CES), funded by the NOAA Coastal Ocean Program.

Climate and Hazards

• Timothy Reinhold of Clemson University will characterize the wind structure in hurricanes and the associated wind loading of buildings. He will also evaluate performance of retrofit technologies in reducing hurricane wind damage and losses. This research could improve the ability of government and industry to establish cost-effective mitigation measures.

Emerging Technologies

• In a continuing project, Laszlo Marton of USC expects to pave the way for a genetically engineered *Spartina alterniflora* plant, which can be used to absorb pollutants in estuarine and marsh habitats. Such improved transgenic plants would be used for soil or water bioremediation in coastal sites.

• Joseph Quattro of USC and a colleague will use the inland silverside, *Menidia beryllina*, as an estuarine "sentinel species." The researchers will study theoretical and empirical population genetics to determine chronic and subtle effects of pollutants on marine and estuarine resources. One product will be genetic assays to identify exposure levels of contaminants of concern in South Carolina.

• Paul Gross and Jonas Almeida of the Medical University of South Carolina will lay the groundwork for new methods and technologies to examine environmental stresses and disease using the Atlantic white shrimp *Litopenaeus setiferus*, as a model organism. The researchers will also train new researchers, particularly graduate students, in the new and emerging technologies associated with "eco-genomics."

Sustainable Economic Development

• Red drum, *Sciaenops ocellatus*, is South Carolina's most popular coastal recreational fish, but the fishery is in severe decline. Theodore Smith of DNR and colleagues will attempt various culture techniques for red drum broodstock for stocking of Murrells Inlet, S.C. The researchers will track the release of nearly half a million of the sport fish each year of the study, determining the overall stocking program's effectiveness in various juvenile habitats.

• A research team led by Charles Weirich of DNR will examine the potential of new technologies in shrimp production systems, which could enhance future expansion and development of the U.S. commercial shrimp-farming industry. The researchers will evaluate selected biological and mechanical filtration technologies for their potential use in zero-exchange, biosecure, super-intensive shrimp production systems.

Marine Education

• In an ongoing COASTeam project, Leslie Sautter of the University of Charleston and colleagues at the S.C. Aquarium will develop and implement a marine and aquatic science education curriculum aligned to the state Science Curriculum Standards at each elementary grade level.

Accomplishments at a glance

South Carolina students win Sea Grant fellowship

Two South Carolina graduate students have won John A. Knauss Marine Policy Fellowships for 2002.

For her Sea Grant fellowship, **Elizabeth R. Fairey** is working for the National Marine Fisheries Service, Office of Habitat Conservation, Coral Reef Program. She is completing a M.S. in environmental policy from the University of Charleston.

Kathy A. Tedesco is working in the National Oceanic and Atmospheric Administration's Office of Global Programs, Climate and Societal Interactions. She is completing a Ph.D. in geological sciences from the University of South Carolina, Columbia.

To further the education of tomorrow's leaders, the National Office of Sea Grant sponsors the Dean John Knauss Marine Policy Fellowship Program, bringing a select group of graduate students to the nation's capital, where they work in the federal government's legislative and executive branches.

The students learn about federal policy regarding marine and Great Lakes natural resources and lend their individual scientific expertise to federal agencies and congressional staff offices.

NEMO expands upstate, to Cooper

The S.C. Nonpoint Education for Municipal Officials (NEMO) program is moving upstate to a seven-county area including the Seneca and upper Saluda watersheds. The NEMO program helps local elected and appointed officials learn about various land-use strategies that can help protect natural resources.

After starting a pilot program in the Waccamaw River, NEMO is also expanding a program to the greater Cooper River watershed. S.C. NEMO operates under a Section 319 grant administered by the S.C. Dept. of Health and Environmental Control in cooperation with the S.C. Sea Grant Extension Program and its partners at Clemson University and the University of South Carolina.

USC student wins Sullivan Science and Engineering Fellowship

Amanda LaZar of Mt. Pleasant, S.C. is the 2002-03 winner of the Kathryn D. Sullivan Science and Engineering Fellowship, sponsored by the S.C. Space Grant Consortium and the S.C. Sea Grant Consortium.

A mechanical engineer major at the University of South Carolina, LaZar is studying materials science and materials processes. She hopes to have a career at NASA someday.

The Sullivan fellowship is awarded annually to a student of either science or engineering who is a rising senior at a university in South Carolina. The award of $7,000 covers tuition, fees, and books.

Sea Grant staff testify to ocean commission

In January, **Rick DeVoe**, executive director of the S.C. Sea Grant Consortium, and **Robert Bacon**, program leader of the S.C. Sea Grant Extension Program, testified before the U.S. Commission on Ocean Policy at its regional meeting in Charleston, S.C. The 16-member commission will develop recommendations in support of a comprehensive national ocean policy to preserve and utilize the world's oceans and their resources. The commission will make formal recommendations to Congress early next year.

DeVoe and Bacon provided examples and case studies of Sea Grant's special academic partnerships with federal, state, and private agencies. DeVoe described how Sea Grant, both nationally and regionally, engages universities, governmental agencies, the business community, and end users to develop information and tools to address critical issues affecting coastal areas.

Bacon cited a demonstration project, "113 Calhoun Street," as an example of partnership between universities, government agencies, and the private sector. This partnership helps transfer research-based information on hazard-loss reduction from the laboratory to homeowners, small contractors, home inspectors, and others.

S.C. Sea Grant Extension Program

S.C. Sea Grant Extension Program is a joint outreach program of Clemson University's Cooperative Extension Service and the S.C. Sea Grant Consortium.

Bob Bacon
Program Leader
S.C. Sea Grant
287 Meeting St.
Charleston, SC 29401
phone (843) 727-2075
fax (843) 727-2080
Robert.Bacon@scseagrant.org

Calvin Sawyer
Coastal Environmental Quality Specialist
Clemson Extension Office
259 Meeting St.
Charleston, SC 29401
phone (843) 722-5940
fax (843) 722-5944
calvins@clemson.edu

April Turner
Community Development Specialist
S.C. Sea Grant
287 Meeting St.
Charleston, SC 29401
phone (843) 727-2075
fax (843) 727-2080
April.Turner@scseagrant.org

Jack Whetstone
Aquaculture Specialist
Clemson Extension Office
PO Drawer 1100
Georgetown, SC 29442
phone (843) 546-4481
fax (843) 546-2852
jwhtstn@clemson.edu

Board of Directors

The Consortium's Board of Directors is composed of the chief executive officers of its member institutions.

Dr. Ronald R. Ingle
Board Chair
Coastal Carolina University

James F. Barker
Clemson University

Dr. Leroy Davis, Sr.
S.C. State University

Dr. Raymond Greenberg
Medical University of South Carolina

Major General John S. Grinalds
The Citadel

Leo I. Higdon, Jr.
College of Charleston

Dr. Paul A. Sandifer
S.C. Department of Natural Resources

Dr. Andrew Sorensen
University of South Carolina

Message from the Executive Director:

On the proposed move of Sea Grant to the National Science Foundation

You may be aware that the White House, via the President's FY2003 budget proposal to the U.S. Congress, has proposed transferring the National Sea Grant College Program from the National Oceanic and Atmospheric Administration (NOAA) to the National Science Foundation (NSF). This issue has received much attention on Capitol Hill, in the scientific and public media, and throughout the university community nationwide.

Rick DeVoe

The primary concern with the proposal is its potential impact on the integrity of the National Sea Grant College Program. We know that the transfer, if it were to occur, would eliminate the strong state-based nature of this university program and eliminate the outreach part of the program. Without outreach, Sea Grant would not have the ability to effectively transfer new scientific knowledge to coastal citizens, industry and governments, and would undermine the ability of scientists to learn about high-priority local needs.

There are three additional considerations. First, both the U.S. House of Representatives and the Senate are currently moving forward to reauthorize Sea Grant *within NOAA* for an additional five years. Second, the U.S. Commission on Ocean Policy, created through federal legislation spearheaded by Senator Ernest F. Hollings, will be issuing major recommendations within 18 months that will affect all ocean-related federal agencies, including NOAA. Finally, nationally prominent organizations, including the National Association of State Universities and Land Grant Colleges (NASULGC), Consortium for Oceanographic Research and Education (CORE), and the American Institute for Biological Sciences (AIBS) have all strongly stated their preference for keeping Sea Grant within NOAA.

The Sea Grant Association, for which I now serve as president, has gone on record stating that no change should be considered in mission, structure, function, and location of the National Sea Grant College Program until the efforts mentioned above are completed.

While this issue is being debated and discussed primarily in Washington, DC, its implications at the state, local, and university levels are profound. It appears that, as a result of the response of the academic, political, and constituent communities to the proposal to transfer Sea Grant to NSF, Sea Grant may be able to weather the storm.

Sea Grant
S.C. Sea Grant Consortium
287 Meeting Street
Charleston, SC 29401
www.scseagrant.org